Executive Summary

The Vancouver Fire and Rescue Services are exploring options to reduce their fuel usage without sacrificing safety or effectiveness of their fleet. This study identified two strategies to explore: expanding the Medic vehicle program and moving some training from Chess Street Training Grounds to "satellite training locations" including Firehalls 9, 10, 15 ,17, 18, and City Hall.

Since it began in November 2010, the Medic program has saved approximately $49,985 in fuel. To expand upon the program, additional Medic trucks could be added to the busiest Firehalls regarding medical calls. The annual calculated savings for adding Medics are summarized in the table below:

Location	Vehicles currently housed, listed in order they respond to medical calls	Annual fuel Savings [L]	Annual cost savings	Annual CO_2 emissions savings [tonnes]
Firehall 3	Heavy Rescue, Engine, Ladder	7,560	$ 7,755.39	17.7
Firehall 6	Engine, Quint	5,088	$ 5,696.00	11.9
Firehall 9	Medic (Freightliner), Quint	3,375	$ 3,278.73	7.9
Firehall 17	Heavy Rescue, Engine, Ladder	3,098	$ 3,177.81	7.3
Firehall 15	Medic, Engine, Quint	2,532	$ 2,849.01	5.9
Firehall 2	Medic, Engine, Quint	2,246	$ 2,527.21	5.3
Firehall 8	Medic, Engine, Wildlands	2,228	$ 2,506.93	5.2
Firehall 7	Heavy Rescue, Engine, Ladder	2,302	$ 2,361.73	5.4
Firehall 22	Wildlands, Engine, Ladder, Hazmat	2,118	$ 2,118.09	5.0
TOTAL		**30,546**	**$ 32,270.90**	**71.7**

Table 1: Fuel savings for additional Medic trucks

Another option would be to replace some of the current vehicles in the Firehalls with Medic trucks. The annual calculated savings for this option are summarized below:

Location	Vehicle that would be replaced	Annual fuel Savings [L]	Annual cost savings	Annual CO2 emissions savings [tonnes]
Firehall 6	Engine	5,616	$ 6,319.29	13.2
Firehall 3	Heavy Rescue	2,595	$ 1,884.94	6.1
Firehall 9	Medic (Freightliner)	1,560	$ 1,133.54	3.7
Firehall 17	Heavy Rescue	1,063	$ 772.37	2.5
Firehall 7	Heavy Rescue	790	$ 574.02	1.9
Firehall 22	Wildlands	367	$ 48.13	0.9
TOTAL		**11,991**	**$ 10,732.29**	**28**

Table 2: Fuel savings for replacing with Medic trucks

The vast majority of VFRS training takes place at Chess StreetTraining Grounds and most of the distances are driven by Engines. To further reduce fuel usage, Firefighters could be encouraged to use Firehalls closer to their home hall depending on the facilities necessary for their training session. For example, Firehalls 12, 19, and 21 on the Vancouver Westside could do some of their training at Firehall 10 instead of at Chess Street. Another example is Firehalls 5 and 20 on the Vancouver Southside could do some of their training at Firehall 17.